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## CARDIAC FUNCTION AND HEART FAILURE

**ASSESSMENT OF PERFORMANCE, SYSTOLIC FUNCTION AND CONTRACTILITY, AND THEIR CORRELATIONS WITH MYOCARDIAL DAMAGE MARKERS IN PATIENTS WITH SEVERE SEPSIS AND SEPTIC SHOCK**

ACC Poster Contributions

Ernest N. Morial Convention Center, Hall F

Sunday, April 03, 2011, 3:30 p.m.-4:45 p.m.

Session Title: Biomarkers and Prognostication in Heart Failure

Abstract Category: 24. Myocardial Function/Heart Failure—Clinical Nonpharmacological Treatment

Session-Poster Board Number: 1054-4

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**Background:** Several studies have assessed the role of the heart in sepsis, without focusing on performance, systolic function or contractility, nor their relation to markers of myocardial damage. Our objective was to assess performance indices of the left ventricle (LV), systolic function and contractility in patients (p) with a positive ( $> 0.1$  ng/ml) or negative troponin T among a population of p with severe sepsis (SS) and septic shock (SSH).

**Methods:** We analyzed 25 p, aged  $45 \pm 13$  years; 8 p had SS and 17 p had SSH. The following parameters were assessed in all p: a) ventricular performance: LV stroke work (SW), b) LV systolic function: ejection fraction (EF), c) LV contractility: EF adjusted by end-systolic stress (ESS), s tissue wave/ESS, midwall fractional shortening (MFS)/ESS, d) ventricular-arterial coupling index (V-A CI), and e) troponin T (TT). The population was divided into 2 groups: G1: TT+ ( $> 0.1$  ng/ml) and G2: TT- ( $\leq 0.1$  ng/ml).

**Results:** Patients with SSH were more frequently assigned to G1. Systolic function indices were more frequently abnormal in G1 compared to G2: EF ( $G1: 45.8 \pm 11.8$  vs.  $G2: 59.95 \pm 9.92$ ,  $p=0.013$ ), as well as contractile status described by the EF/ESS ratio ( $G1: 21.92 \pm 9.26$  vs.  $G2: 34.96 \pm 10.18$ ,  $p=0.021$ ), s wave/ESS ( $G1: 2.58 \pm 1.38$  vs.  $G2: 3.83 \pm 1.16$ ,  $p=0.05$ ), MFS/ESS ( $G1: 6.78 \pm 4.33$  vs.  $G2: 12.19 \pm 4.41$ ,  $p=0.01$ ). No differences were seen in performance, SW ( $G1: 66.10 \pm$  vs.  $G2: 70.06 \pm 18.55$ ,  $p=0.70$ ) or V-A coupling: ( $G1: 1.22 \pm 1.19$  vs.  $G2: 0.61 \pm 0.40$ ,  $p=0.083$ ).

**Conclusions:** Patients with TT + are more frequent among the SSH group. The presence of this positive marker was associated to a greater impairment in systolic function and contractile status, with preserved ventricular-arterial coupling, thus reinforcing the concept of primary myocardial failure.